

WESLEY A. TRAUB

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Education

Ph.D., Physics, University of Wisconsin – Madison (1968)
M.S., Physics, University of Wisconsin – Madison (1964)
B.S., Physics and Mathematics, University of Wisconsin – Milwaukee (1962)

Positions Held

Senior Research Scientist, NASA JPL (2007-present)
Chief Scientist, Exoplanet Exploration Program, NASA JPL (2008--present)
Chief Scientist, Navigator Program, NASA JPL (2005--2008)
Project Scientist, Terrestrial Planet Finder Coronagraph, NASA JPL (2005--present)
Research Associate, Harvard-Smithsonian Center for Astrophysics (2005--present)
Senior Physicist, Smithsonian Astrophysical Observatory (1998--2005)
Consultant, Perkin-Elmer Corporation (1984--1987)
Lecturer on Astronomy, Harvard University (1976--1989)
Consultant, Laser Optics, Inc. (1975--1978)
Associate of the Harvard College Observatory (1975--1976)
Research Fellow in Applied Physics, Harvard University (1968--1974)
Physicist, Smithsonian Astrophysical Observatory (1968--1998)

Professional Societies

American Association for the Advancement of Science	Sigma Xi
American Astronomical Society	Optical Society of America
American Geophysical Union	International Astronomical Union

Fields of Investigation

Extrasolar Planets: Detection and Characterization
Co-Chair, Science and Technology Development Team, TPF-C, NASA, (2004-2006)

High Angular Resolution Astrophysics:
Project Scientist for Infrared-Optical Telescope Array (IOTA), (1997-2006)

Stratospheric Physics and Chemistry:
Principal Investigator for Far-Infrared Spectrometer (FIRS-2), (1975--2005)

National Committees and Service Activities

Member of Scientific Organizing Committee, Division for Planetary Sciences meeting, AAS, (1977)
Member, Upper Atmosphere Research Satellite Panel, NASA, (1979)
Member, Infrared Subcommittee of Ultraviolet-Optical-Infrared Panel, Astronomy Survey Committee,
National Academy of Science, (1979--1980)

Member, Infrared Experiments Working Group, NASA, (1980)
Member, Astrophysical Utilization of the Space Station Panel, NASA, (1984)
Member, Task Force on the Scientific Uses of the Space Station, NASA, (1984)
Member of Stratospheric Ozone Assessment Panel, NASA, World Meteorological Organization, and Federal Aviation Administration, (1985)
Member, Workshop on Technology for Space, National Committee on Space, (1985)
Member of Scientific Organizing Committee, Workshop on Imaging Interferometry in Space, National Academy of Science and NASA, (1985)
Member, Technical Working Group for Imaging Interferometry in Space, NASA, (1987)
Member of Scientific Organizing Committee, Space Optics meeting, Optical Society of America, (1988)
Member, Balloon Working Group, NASA, (1988--1991)
Member, Science and Technology for Space Optical Interferometry workshops, NASA, (1989--1990)
Member of Science Advisory Committee, Controlled Structure Technology, Department of Aeronautics & Astronautics, MIT, (1989--1991)
Member, Allen Prize Committee, Optical Society of America, (1990)
Member, Sounding Rocket Review Panel, NASA, (1990)
Principal Investigator, Upper Atmosphere Research Satellite Correlative Measurement, NASA, (1990--1994)
Member of Scientific Organizing Committee, Optical Remote Sensing of the Atmosphere meeting, Optical Society of America, (1991)
Principal Investigator, Airborne Arctic Stratospheric Expedition II, NASA, (1991--1992)
Chairman of Review Panel, UV, Visible, and Gravitational Astrophysics Research and Analysis, NASA, (1991)
Member of Scientific Organizing Committee, Fourier Transform Spectroscopy conference, Optical Society of America, (1992)
Co-Chairman, Infrared and Millimeter Wave Engineering Conference, SPIE, (1993)
Co-Chairman, Spaceborne Interferometry Conference, SPIE, (1993)
Co-Chairman, Astronomical Telescopes & Instrumentation for the 21st Century, SPIE, (1994)
Co-Chairman, Fourier Transform Spectroscopy conference, Optical Society of America, (1995)
Co-Chairman, Infrared and Millimeter Wave Engineering Conference, SPIE, (1995)
Session Chairman, Combined Optical-Microwave Earth and Atmosphere Sensing conference, IEEE, (1995)
Co-Chairman, Spaceborne Interferometry II conference, SPIE, (1995)
Member of Review Panel, New Mission Concepts for Astrophysics, NASA, (1995)
Editor for Special Issue on Fourier transform spectroscopy, Applied Optics, (1995--1996)
Member of Scientific Organizing Committee, Fourier Transform Spectroscopy conference, Optical Society of America, (1996--1997)
Scientific Organizer, Alaska Balloon Campaign, NASA and NASDA, (1997)
Member, Balloon Working Group, NASA, (1996--1999)
Member, Extrasolar Zodiacal Cloud Panel, NASA, (1996--2000)
Member, Space Interferometer Mission Science Working Group, NASA, (1996--2000)
Member and lecturer, Scientific Organizing Committee, NPOI Interferometry School, (1998)
Member, Non-Advocate Review of Ground-based IR Interferometry for Detecting Exozodiacal Dust, NASA, (1998 and 2000)
Member, Terrestrial Planet Imager Study Group, NASA, (1998)
Member, Adaptive Optics, Imaging Interferometry, and Image Processing Techniques Review Panel, NSF, (1998)
Member, Michelson Graduate Student Fellowship Program Advisory Panel, NASA-JPL, (1999)
Member, Advanced Technologies and Instrumentation Review Panel, NSF, (2000)
Member, Cycle 10 Hubble Space Telescope Review Panel, STScI, (2000)
Member, Ball Aerospace Team for Terrestrial Planet Finder, NASA-JPL, (2000-2002)
Member, Terrestrial Planet Finder (1st) Science Working Group, NASA, (2000-2002)
Contributor, Origins Roadmap Subcommittee, NASA, (2002)
Member, Far-Infrared Sub-MM Roadmap Committee, NASA, (2002)
Member, ExoJupiter Working Group, NASA-JPL, (2002-2003)
Conference Chair, and Editor, Interferometry for Optical Astronomy II, SPIE, (2001-2002)

Member and Coronagraph Group Lead, Terrestrial Planet Finder (2nd) Science Working Group, NASA, (2002-2004)
Host, Michelson Interferometry Summer School at CfA, NASA-JPL, (2001-2002)
Member, Magdalena Ridge Observatory Interferometer review committee, (2002)
Member, SOC for Darwin-TPF Conference in Heidelberg, (2002-2003)
Member, Origins Subcommittee, NASA-HQ, (2003-2006)
Member, Keck Interferometer Science Working Group, NASA-JPL, (2003--)
Conference Chair and Editor, New Frontiers in Interferometry, SPIE, (2003-2004)
Member, SOC for Coronagraph Conference in Leiden, (2003-2004)
Member, NASA Origins Roadmap Team, (2004-2005)
Member, Advisory Review Panel, FIRSI Vision Mission study, NASA, (2004)
Member, Advisory Review Panel, SPIRIT Origins Probe study, NASA, (2004)
Chair, Adaptive Optics Development Program review panel, NOAO-NSF, (2004)
Member, SOC for Techniques and Instrumentation for Detection of Exo-Planets, SPIE, (2004-2005)
Member, SOC for Direct Imaging of Exoplanets: Science and Techniques, IAU Colloq. 200, (2004-05)
Member, SOC for meeting on astronomical instruments, SPIE, (2005-2006)
Co-Chair, Science and Technology Development Team, TPF-C, NASA, (2004-2006)
Member, SOC for UV/Optical/IR Space Telescopes, SPIE, (2006-2007)
Conference Chair, Coronagraph Workshop (2006)
Co-Chair, Navigator Program Exoplanet Forum (2006, 2007, 2008)
Member, SOC for Astrobiology Science Conference (2008)
Member, SOC for Sagan Summer Workshop, Pasadena (2009)
Member, SOC for New Tech. for Probing the Diversity of BDs & Exoplanets , Shanghai (2009)
Member, SOC for Pathways Toward Habitable Exoplanets Conf., Barcelona (2009)

Awards

Smithsonian Institution Award for Special Achievement Reflecting a High Standard of Accomplishment, (1989, 1994, 1996).
NASA Group Achievement Award for Balloon Observations of the Stratosphere Team, (2004).
NASA Group Achievement Award to FIRST Team (2006).
Distinguished Alumni Award, Dept. of Physics, Univ. of Wisconsin-Madison (2008)

Edited Volumes

Interferometry for Optical Astronomy II, W.A. Traub, editor, SPIE **4838**, xxix plus 1466 pages, 2002.
New Frontiers in Stellar Interferometry, W.A. Traub, editor, SPIE **5491**, xxx plus 1842 pages, 2004.
Fourier Transform Spectroscopy: New Methods and Applications, W.A. Traub, R.J. Winkel, and A. Goldman, feature editors, Applied Optics **35**, 1996.
Earth-Like Exoplanets: The Science of NASA's Navigator Program, P.R. Lawson and W.A. Traub, editors, JPL Publication 06-5, 2006.
Coronagraph Workshop 2006, W.A. Traub, editor, JPL Publication 07-02, 2007.
Exoplanet Community Report, P.R. Lawson, W.A. Traub, and S.C. Unwin, editors, JPL Publication 09-3, 2009.

Book Chapters

Slicing the Sky: Sharper Images with an Orbiting Array of Optical Telescopes, W.A. Traub, in Infinite Vistas, New Tools for Astronomy, J. Cornell and J. Carr, editors, Scribners, pp. 67-103, 1985.

Beam Combination and Fringe Measurement, W.A. Traub, in Principles of Long Baseline Interferometry, P.R. Lawson, editor, pp. 31-58, JPL Publication 00-009, 2000.

Direct Imaging, W.A. Traub and B.R. Oppenheimer, in Exoplanets, S. Seager, editor, University of Arizona Press, 2010.

BIBLIOGRAPHY: REFEREED PUBLICATIONS

1. Precision Mapping of Pairs of Uncoated Optical Flats (F.L. Roesler and W.A. Traub) *Applied Optics* **5**, pp. 463--468, (1966)
2. Spectroscopic Measurement of the Nuclear Spin and Magnetic Moment of 39 Argon (W.A. Traub, F.L. Roesler, M.M. Robertson, and V.W. Cohen) *Journal of the Optical Society of America* **57**, pp. 1452--1458, (1967)
3. Lithium Abundance in Sunspots (W.A. Traub) Ph.D. Thesis, Department of Physics, University of Wisconsin, (1968)
4. The Abundance of Lithium in Sunspots (W.A. Traub and F.L. Roesler) *Astrophysical Journal* **163**, pp. 629--644, (1971)
5. Cosmic Background Radiation at 1.32 mm (D.J. Hegyi, W.A. Traub and N.P. Carleton) *Physical Review Letters* **28**, pp. 1541--1544, (1972)
6. Detection of Molecular Oxygen on Mars (N.P. Carleton and W.A. Traub) *Science* **177**, pp. 988--992, (1972)
7. Detection of Interstellar Lithium (W.A. Traub and N.P. Carleton) *Astrophysical Journal Letters* **184**, pp. L11--L14, (1973)
8. Observation of HD on Jupiter and the D/H Ratio (J.T. Trauger, F.L. Roesler, N.P. Carleton and W.A. Traub) *Astrophysical Journal Letters* **184**, pp. L137--L141, (1973)
9. Cosmic Background Radiation at 1.32 Millimeters (D.J. Hegyi, W.A. Traub and N.P. Carleton) *Astrophysical Journal* **190**, pp. 543--544, (1974)
10. Search for Deuterium in Orion and Detection of High-Velocity Features (W.A. Traub, N.P. Carleton, and D.J. Hegyi) *Astrophysical Journal Letters* **190**, pp. L81--L84, (1974)
11. A Search for H₂O and CH₄ in Comet Kohoutek (W.A. Traub and N.P. Carleton) *Icarus* **23**, pp. 585--589, (1974)
12. Spectroscopic Observations of Winds on Venus (W.A. Traub and N.P. Carleton) *Journal of the Atmospheric Sciences* **32**, pp. 1045--1059, (1975)
13. The Effective Temperature of Uranus (G.G. Fazio, W.A. Traub, E.L. Wright, F.J. Low, and L. Trafton) *Astrophysical Journal* **209**, pp. 633--637, (1976)

14. Theoretical Atmospheric Transmission in the Mid- and Far-Infrared at Four Altitudes (W.A. Traub and M.T. Stier) *Applied Optics* **15**, pp. 364--377, (1976)
15. Detection of O₂ Dayglow Emission from Mars and the Martian Ozone Abundance (J.F. Noxon, W.A. Traub, N.P. Carleton, and P. Connes) *Astrophysical Journal* **207**, pp. 1025--1035, (1976)
16. The Rotational Velocity and Barium Abundance of Sirius (R.L. Kurucz, W.A. Traub, N.P. Carleton, and J.B. Lester) *Astrophysical Journal* **217**, pp. 771--774, (1977)
17. A Search for Emission from vibrationally Excited H₂ (W.A. Traub, N.P. Carleton, and J.H. Black) *Astrophysical Journal* **223**, pp. 140--146, (1978)
18. A Search for Stellar Oscillations (W.A. Traub, J.T. Mariska, and N.P. Carleton) *Astrophysical Journal* **223**, pp. 583--588, (1978)
19. Far-Infrared Observations of Uranus, Neptune, and Ceres (M.T. Stier, W.A. Traub, G.G. Fazio, E.L. Wright and F.J. Low) *Astrophysical Journal* **226**, pp. 347--349, (1978)
20. Retrograde Winds on Venus: Possible Periodic Variations (W.A. Traub and N.P. Carleton) *Astrophysical Journal* **227**, pp. 329--333, (1979)
21. The Latitude Variation of O₂ Dayglow and O₃ Abundance on Mars (W.A. Traub, N.P. Carleton, P. Connes and J.F. Noxon) *Astrophysical Journal* **229**, pp. 846--850, (1979)
22. O₂ (Singlet Delta) Emission in the Day and Night Airglow of Venus (P. Connes, J.F. Noxon, W.A. Traub and N.P. Carleton) *Astrophysical Journal Letters* **233**, pp. L29--L32, (1979)
23. Far-Infrared Measurements of Stratospheric HCl (K.V. Chance, J.C. Brasunas and W.A. Traub) *Geophysical Research Letters* **7**, pp. 704--706, (1980)
24. Stratospheric HF and HCl Observations (W.A. Traub and K.V. Chance) *Geophysical Research Letters* **8**, pp. 1075--1077, (1981)
25. Infrared Telescope on Spacelab 2 (D. Koch, G.G. Fazio, W.A. Traub, G.H. Rieke, T.N. Gautier, W.F. Hoffmann, F.J. Low, W. Poteet, E.T. Young, E.W. Urban and L. Katz) *Optical Engineering* **21**, pp. 141--147, (1982)
26. Q Branches in the Rotational Spectrum of HOCl (K.V. Chance and W.A. Traub) *Journal of Quantitative Spectroscopy and Radiative Transfer* **2**, pp. 81--84, (1982)
27. The Torsional Spectrum of Chlorine Nitrate (K.V. Chance and W.A. Traub) *Journal of Molecular Spectroscopy* **95**, pp. 306--312, (1982)
28. An Upper Limit for Stratospheric Hydrogen Peroxide (K.V. Chance and W.A. Traub) *Journal of Geophysical Research* **89**, pp. 11655--11660, (1984); erratum in *J.G.R.* **90**, p. 10756 (1985)
29. Combining Beams from Separated Telescopes (W.A. Traub) *Applied Optics* **25**, pp. 528--532, (1986)
30. Design of a Single-Axis Platform for Balloon-Borne Remote Sensing (L.M. Coyle, G. Aurilio, J. Bortz, K.V. Chance, B.G. Nagy, G.U. Nystrom, and W.A. Traub) *Review of Scientific Instruments* **57**, pp. 2512--2518, (1986)
31. Performance of a Single-Axis Platform for Balloon-Borne Remote Sensing (W.A. Traub, L.M. Coyle, and K.V. Chance) *Review of Scientific Instruments* **57**, pp. 2519--2522, (1986)

32. Atomic Oxygen in the Lower Thermosphere (F.J. Lin, K.V. Chance, and W.A. Traub) *Journal of Geophysical Research* **92**, pp. 4325--4336, (1987)
33. Evidence for Stratospheric Hydrogen Peroxide (K.V. Chance and W.A. Traub) *Journal of Geophysical Research* **92**, pp. 3061--3066, (1987)
34. Measurement of Stratospheric HOCl: Concentration Profiles, Including Diurnal Variation (K.V. Chance, D.G. Johnson, and W.A. Traub) *Journal of Geophysical Research* **94**, pp. 11059--11069, (1989)
35. Intercomparison of Stratospheric Water Vapor Profiles Obtained During the Balloon Intercomparison Campaign (D.G. Murcray, A. Goldman, J. Kosters, R. Zander, W. Evans, N. Louisnard, C. Alamichel, M. Bangham, S. Pollitt, B. Carli, B. Dinelli, S. Piccioli, A. Volboni, W.A. Traub, and K. Chance) *Journal of Atmospheric Chemistry* **10**, pp. 159--179, (1990)
36. Ozone Measurements During the Balloon Intercomparison Campaign (D. Robbins, J. Waters, P. Zimmerman, R. Jarnot, J. Hardy, H. Pickett, S. Pollitt, W.A. Traub, K. Chance, N. Louisnard, W. Evans, and J. Kerr) *Journal of Atmospheric Chemistry* **10**, pp. 181--218, (1990)
37. Intercomparison of Measurements of Stratospheric Hydrogen Fluoride (W.G. Mankin, M.T. Coffey, K.V. Chance, W.A. Traub, B. Carli, F. Mencaraglia, S. Piccioli, I.G. Nolt, J.V. Radostitz, R. Zander, G. Roland, D.W. Johnson, G.M. Stokes, C.B. Farmer, and R.K. Seals) *Journal of Atmospheric Chemistry* **10**, pp. 219--236, (1990)
38. Balloon Intercomparison Campaigns: Results of Remote Sensing Measurements of HCl (C.B. Farmer, B. Carli, A. Bonetti, M. Carlotti, B.M. Dinelli, H. Fast, W.F.J. Evans, N. Louisnard, C. Alamichel, W. Mankin, M. Coffey, I.G. Nolt, D.G. Murcray, A. Goldman, G.M. Stokes, D.W. Johnson, W.A. Traub, K.V. Chance, R. Zander, and L. Delbouille) *Journal of Atmospheric Chemistry* **10**, pp. 237--272, (1990)
39. Stratospheric Hydroperoxyxl Measurements (W.A. Traub, D.G. Johnson, and K.V. Chance) *Science* **247**, pp. 446--449, (1990)
40. Constant-Dispersion Grism Spectrometer for Channeled Spectra (W.A. Traub) *Journal of the Optical Society of America (A)* **7**, pp. 1779--1791, (1990)
41. On the Use of O₂ Spin-Rotation Lines for Elevation Angle Calibration of Atmospheric Thermal Emission Spectra (K.V. Chance, W.A. Traub, K.W. Jucks, and D.G. Johnson) *International Journal of Infrared and Millimeter Waves* **12**, pp. 581--588, (1991)
42. Measurement of the Stratospheric Hydrogen Peroxide Concentration Profile Using Far-Infrared Thermal Emission Spectroscopy (K.V. Chance, D.G. Johnson, W.A. Traub, and K.W. Jucks) *Geophysical Research Letters* **18**, pp. 1003--1006, (1991)
43. Stratospheric Minor Constituent Distributions from Far-Infrared Thermal Emission Spectra (M. Abbas and W.A. Traub) *Journal of Geophysical Research* **97**, pp. 18,035--18,045, (1992)
44. Upper Limit for Stratospheric HBr Using Far-Infrared Thermal Emission Spectroscopy (W.A. Traub, D.G. Johnson, K.W. Jucks, and K.V. Chance) *Geophysical Research Letters* **19**, pp. 1651--1654, (1992)
45. Heterogeneous Reaction Probabilities, Solubilities, and the Physical State of Cold Volcanic Aerosols (O. Toon, E. Browell, B. Gary, L. Lait, J. Livingston, P. Newman, R. Pueschel, P. Russell, M. Schoeberl, G. Toon, W. Traub, F. Valero, H. Selkirk, and J. Jordan) *Science* **261**, pp. 1136--1140, (1993)

46. Chemical Change in the Arctic Vortex During AASE-II (W.A. Traub, K.W. Jucks, D.G. Johnson, and K.V. Chance) *Geophysical Research Letters* **21**, pp. 2595--2598, (1994)
47. The Smithsonian Astrophysical Observatory Database SAO92 (K. Chance, K.W. Jucks, D.G. Johnson, and W.A. Traub) *Journal of Quantitative Spectroscopy and Radiative Transfer* **52**, pp. 447--457, (1994)
48. Comparison of Column Abundances from Three Infrared Spectrometers During AASE II (W.A. Traub, K.W. Jucks, D.G. Johnson, M.T. Coffey, W.G. Mankin, and G.C. Toon) *Geophysical Research Letters* **21**, pp. 2591--2594, (1994)
49. First 2.2-micron Results from the IOTA Interferometer (H.M. Dyck, J.A. Benson, C. Papaliolios, N.P. Carleton, C. Coldwell, M.G. Lacasse, P. Nisenson, A. Panasyuk, M.R. Pearlman, R.D. Reasenberg, W.A. Traub, X. Xu, R. Predmore, F.P. Schloerb, and D.M. Gibson) *Astronomical Journal* **109**, pp. 378--382, (1995)
50. The Smithsonian Stratospheric Far-Infrared Spectrometer and Data Reduction System (D.G. Johnson, K.W. Jucks, W.A. Traub, and K.V. Chance) *Journal of Geophysical Research* **100**, pp. 3091--3106, (1995)
51. Estimating the Abundance of ClO from Simultaneous Remote Sensing Measurements of HO₂, OH, and HOCl (D.G. Johnson, W.A. Traub, K.V. Chance, K.W. Jucks, and R.A. Stachnik) *Geophysical Research Letters* **22**, pp. 1867--1871, (1995)
52. Subsidence of the Arctic Stratosphere Determined from Thermal Emission of HF (W.A. Traub, K.W. Jucks, D.G. Johnson, and K.V. Chance) *Journal of Geophysical Research* **100**, pp. 11,261--11,267, (1995)
53. Detection of HBr and Upper Limit for HOBr: Bromine Partitioning in the Stratosphere (D.G. Johnson, W.A. Traub, K.V. Chance, and K.W. Jucks), *Geophysical Research Letters* **22**, pp. 1373--1376, (1995)
54. Comparison of correlative data with HNO₃ version 7 from the CLAES instrument deployed on the NASA Upper Atmosphere Research Satellite (J.B. Kumer, J.L. Mergenthaler, A.E. Roche, R.W. Nightingale, G.A. Ely, W.G. Uplinger, J.C. Gille, S.T. Massie, P.L. Bailey, M.R. Gunson, M.C. Abrams, G.C. Toon, B.Sen, J.-F. Blavier, R.A. Stachnik, C.R. Webster, R.D. May, D.G. Murcray, F.J. Murcray, A. Goldman, W.A. Traub, K.W. Jucks, and D.G. Johnson), *Journal of Geophysical Research* **101**, pp. 9621--9656, (1996)
55. Validation of CH₄ and N₂O measurements by the cryogenic limb array etalon spectrometer instrument on the Upper Atmosphere Research Satellite (A.E. Roche, J.B. Kumer, R.W. Nightingale, J.L. Mergenthaler, G.A. Ely, P.L. Bailey, S.T. Massie, J.C. Gille, D.P. Edwards, M.R. Gunson, M.C. Abrams, G.C. Toon, C.R. Webster, W.A. Traub, K.W. Jucks, D.G. Johnson, D.G. Murcray, F.H. Murcray, A. Goldmen, E.C. Zipf) *Journal of Geophysical Research* **101**, pp. 9679--9710, (1996)
56. Validation of UARS Microwave Limb Sounder 183 GHz H₂O measurements (W.A. Lahoz, M.R. Suttie, L. Froidevaux, R.S. Harwood, C.L. Lau, T.A. Lungu, G.E. Peckham, H.C. Pumphrey, W.G. Read, Z. Shippony, R.A. Suttie, J.W. Waters, G.E. Nedoluha, S.J. Oltmans, J.M. Russell III, and W.A. Traub), *Journal of Geophysical Research* **101**, pp. 10,129--10,150, (1996)
57. Validation of hydrogen chloride measurements made by the Halogen Occultation Experiment from the UARS platform (J.M. Russell III, L.E. Deaver, M. Luo, J.H. Park, L.L. Gordley, A.F. Tuck, G.C. Toon, M.R. Gunson, W.A. Traub, D.G. Johnson, K.W. Jucks, D.G. Murcray, R. Zander, I.G. Nolt, and C.R. Webster) *Journal of Geophysical Research* **101**, pp. 10,151--10,162, (1996)

58. Validation of hydrogen fluoride measurements made by the Halogen Occultation Experiment from the UARS platform (J.M. Russell III, L.E. Deaver, M. Luo, R.J. Cicerone, J.H. Park, L.L. Gordley, G.C. Toon, M.R. Gunson, W.A. Traub, D.G. Johnson, K.W. Jucks, R. Zander, and I.G. Nolt) *Journal of Geophysical Research* **101**, pp. 10,163--10,174, (1996)
59. Validation of measurements of water vapor from the Halogen Occultation Experiment (HALOE) (J.E. Harries, J.M. Russell III, A.F. Tuck, L.L. Gordley, P. Purcell, K. Stone, R.M. Bevilacqua, M. Gunson, G. Nedoluha, and W.A. Traub) *Journal of Geophysical Research* **101**, pp. 10,205--10,216, (1996)
60. Simultaneous Measurements of Stratospheric HO_x, NO_x, and Cl_x: Comparison with a Photochemical Model (K. Chance, W.A. Traub, D.G. Johnson, K.W. Jucks, P. Ciarpallini, R.A. Stachnik, R.J. Salawitch, and H.A. Michelsen) *Journal of Geophysical Research* **101**, pp. 9031--9043, (1996)
61. A search technique for planets in nearby binary stars using a ground-based interferometer (W.A. Traub, N.P. Carleton, and I.L. Porro) *Journal of Geophysical Research* **101**, pp. 9291--9295, (1996)
62. New designs for far-infrared beamsplitters (J.A. Dobrowolski and W.A. Traub) *Applied Optics* **35**, pp. 2934--2946, (1996)
63. Phase determination from mostly one-sided interferograms (D.G. Johnson, W.A. Traub, and K.W. Jucks) *Applied Optics* **35**, pp. 2955--2959, (1996)
64. Measurement of chlorine nitrate in the stratosphere using the nu-4 and nu-5 bands (D.G. Johnson, J. Orphal, G.C. Toon, K.V. Chance, W.A. Traub, K.W. Jucks, G. Guelachvili, and M. Morillon-Chapey) *Geophysical Research Letters* **23**, pp. 1745--1748, (1996)
65. Ozone Production and Loss Rate Measurements in the Middle Stratosphere (K.W. Jucks, D.G. Johnson, K.V. Chance, W.A. Traub, R.J. Salawitch, and R.A. Stachnik) *Journal of Geophysical Research* **101**, pp. 28,785-28,792, (1996)
66. Extension of the effective temperature scale of giants to types later than M6 (G. Perrin, V. Coude du Foresto, S.T. Ridgway, J.-M. Mariotti, W.A. Traub, N.P. Carleton, and M.G. Lacasse) *Astronomy and Astrophysics* **331**, pp.619-626, (1998)
67. Observations of OH, HO₂, H₂O, and O₃ in the upper stratosphere: implications for HO_x photochemistry (K.W. Jucks, D.G. Johnson, K.V. Chance, W.A. Traub, J.J. Margitan, G.B. Osterman, R.J. Salawitch, and Y. Sasano), *Geophysical Research Letters* **25**, pp. 3935--3938, (1998)
68. Model, Software, and Database for Computation of Line-Mixing Effects in Infrared Q-Banches of Atmospheric CO₂ . I. Symmetric isotopomers (R. Rodrigues, K.W. Jucks, N. Lacome, Gh. Blanquet, J. Walrand, W.A. Traub, B. Khalil, R. Le Doucen, A. Valentin, C. Camy-Peyret, L. Bonamy, and J.-M. Hartmann), *Journal of Quantitative Spectroscopy and Radiative Transfer* **61**, pp. 153--184 (1999)
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